



Interaction Between Green Power and Carbon Markets

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What Happens to Green Power Markets in the Era of Carbon Regulation?

- Voluntary markets growing rapidly
 - Sales increased 40% in 2005, 60% in 2004
 - ~2,000 MW of new renewables supply voluntary markets (20% of total new RE capacity since 1997)
- Voluntary markets play important role:
 - Empower consumers
 - Educate public about renewables
- What will happen to voluntary markets if carbon is regulated under cap and trade?
- Presentation focus on claims issues and policy solutions

Climate Change Concerns as Motivator for Voluntary Purchasers

- Clearer evidence from nonresidential customers, than residential sector
 - Purchasing green power to meet internal greenhouse gas (GHG) reduction goals, participation in GHG registries
 - Purchaser news releases cite GHG reductions
 - Some make strong statements tying purchase to GHG
- “Carbon offset” products increasingly common
 - Selling tons of carbon reduced, rather than kWh
 - Carbon footprint calculators
- What will be impact on demand if marketers cannot claim GHG benefits?

Examples of Importance of Climate Change in Purchasing Decisions

“The most pressing issue of our time is climate change....If everyone in the world bought renewable energy certificates like we have done, we'd be well on our way to solving the climate problem.”

– Aspen Skiing Co. news release March 2006

“Recognizing the importance of climate change, last December HSBC became the world's first major bank to commit to carbon neutrality and...has offset a substantial quantity of its carbon emissions by purchasing 79, 181 MWh of clean, wind energy certificates.”

– HSBC Bank News Release April 22, 2005



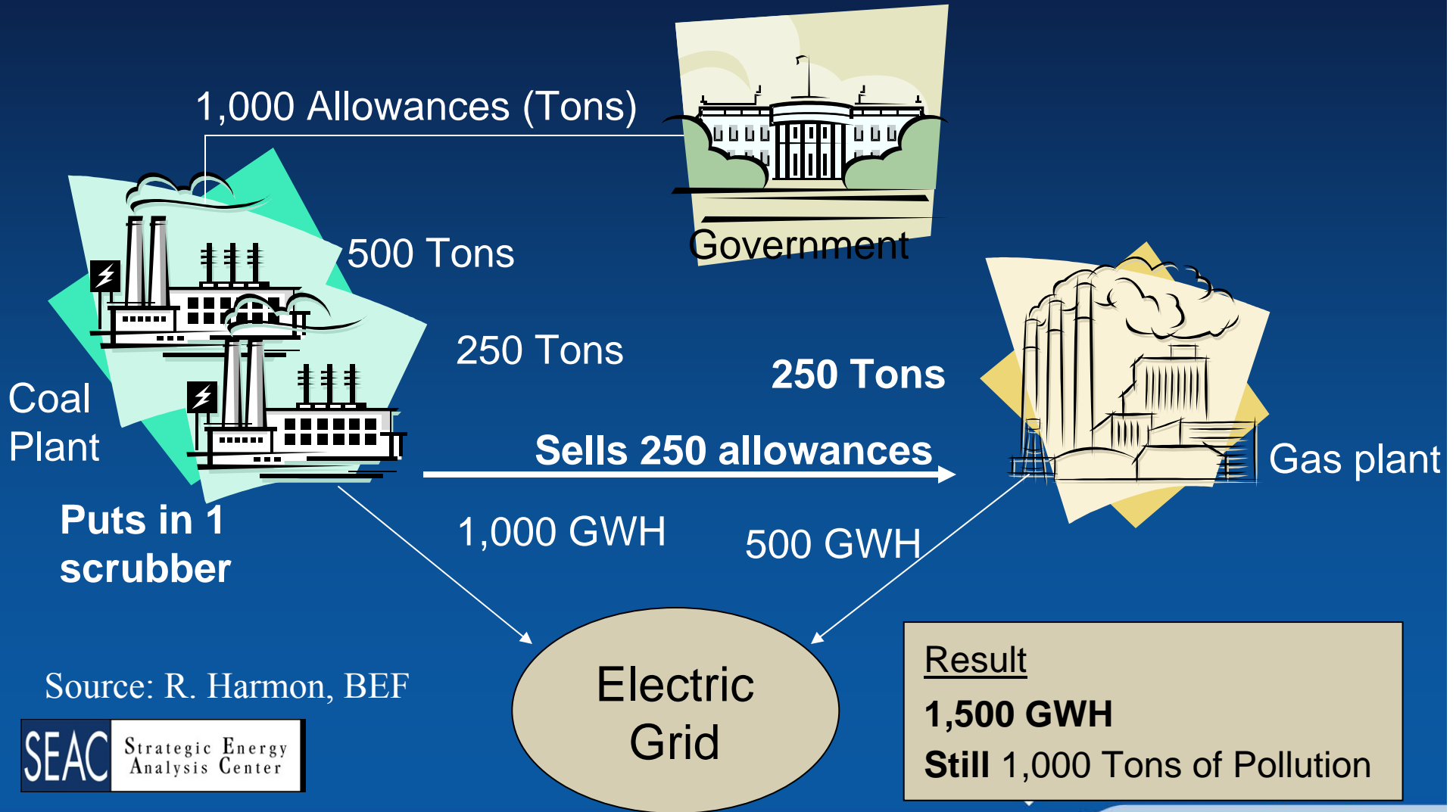
Carbon Regulation – Cap and Trade?

- Strength of GHG benefit claims may be affected by carbon regulation, particularly cap and trade
- Significant policy precedent for using cap and trade
 - SO₂ program, NO_x Budget Trading Program, CAIR
 - Regional Greenhouse Gas Initiative in Northeast
 - Likely to be on table if federal action taken
- Under cap and trade, renewables cannot claim to affect emissions levels unless they receive and retire allowances (or allowances are retired on their behalf)
 - Otherwise level of emissions remains at the cap

Reducing Emissions Under a Cap and Trade Program

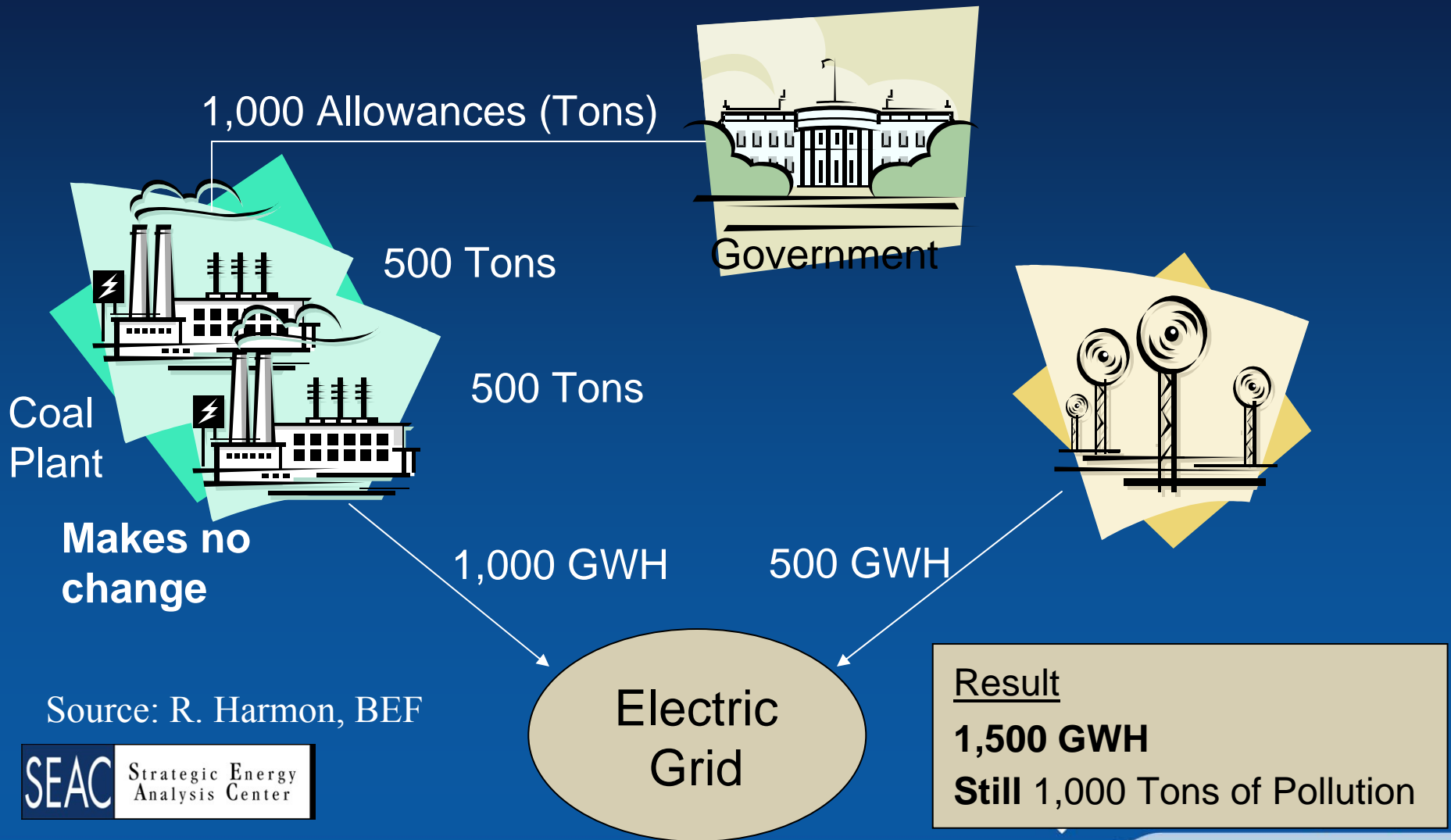
- An allowance must be retired to make a claim of overall emissions reductions
- If renewables are not given allowances,
 - 1) RE generation offsets the need for some other type of generation (fossil fuel in most areas)
 - 2) If a fossil fuel generator backs down or does not run on account of the RE generator, then the fossil generator emits less carbon
 - 3) Enables fossil generator to sell allowances to another emitter, who emits more
 - 4) Overall level of emissions remains at the level of the cap

Cap and Trade
Add 500 GWH with Natural Gas
(Allowances Remain Capped at 1,000)



Source: R. Harmon, BEF

Cap and Trade (no allocation to RE)
Add 500 GWH of Wind
(Allowances Remain Capped at 1,000)



The Problem for Voluntary Markets: Environmental Claims

- If renewables are not covered under the cap, what claims can RE marketers make?
 - “emissions free” (does this imply emissions reductions?)
 - “reduces your (indirect) emissions” (but overall level of carbon remains unchanged)
 - RE will have long-run benefits, enabling the cap to be reduced more cost-effectively (difficult to substantiate)
- Will these types of claims be enough to attract customers? How will this impact demand?
- To make more substantial claims involves retiring allowances -- how can that be achieved?

Emerging U.S. Carbon Regulation

- States taking lead in absence of federal regulation
 - Regional Greenhouse Gas Initiative (RGGI)
 - California – AB32 and load-based cap
- Design of these policies will impact claims that RE can make
- Policy options

Regional Greenhouse Gas Initiative

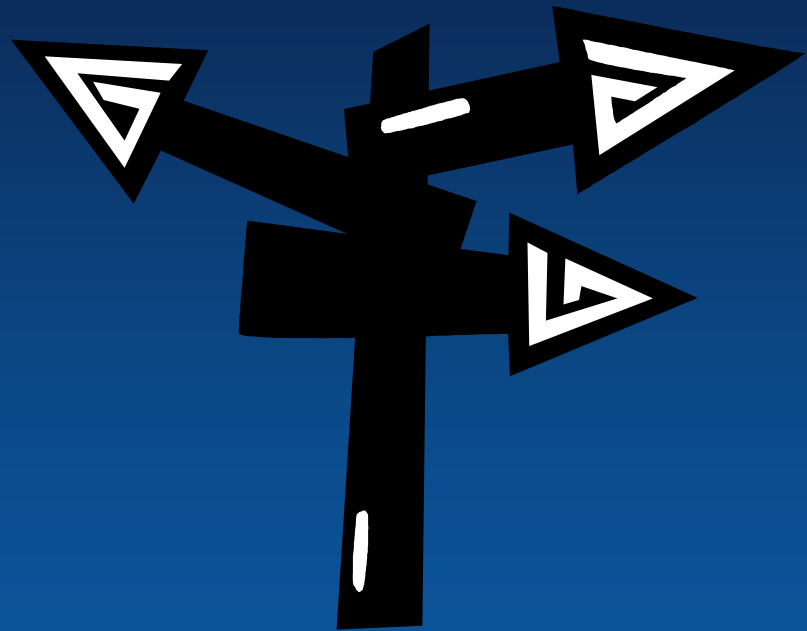
- Purpose: Stabilize, then reduce GHG emissions in participating states while sustaining affordable and reliable energy
- 7 states in Northeast are participating
 - CT, DE, ME, NH, NJ, NY and VT
- Sectors: Fossil fuel power plants ≥ 25 MW
- Emissions: CO₂
- Emissions reduction timeline:
 - Baseline 2009-2014
 - 2.5% reduction annually 2015- 2018

California

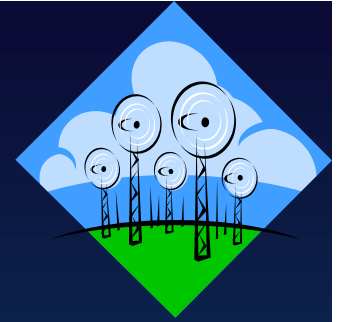
- AB32- Global Warming Solutions Act
 - Purpose: Reduce CA's impact on climate change
 - Sectors: All significant sources of GHG in the state
 - Emissions: All 6 GHGs
 - Baseline: 1990 levels
 - Current Status
 - Early action measures determined by 2007
 - Regulations in place by 2011 (beginning 2012)
- CPUC regulation for load serving entities (LSEs)
 - Phase I- Emissions Performance Standard by 2007
 - Phase 2- Load-based cap-planning will begin this fall

Policy Options that Enable Stronger Emission Reduction Claims

- 1- Allocate directly to RE generators
- 2- Load-based cap
- 3- Retire allowances on behalf of RE demand
- 4- RE eligible as offset



Allocate Allowances to RE



- Receiving and retiring an allowance gives RE marketers the ability to make strongest claims
- Two primary methods:
 - Output-based
 - Allowances granted to generators based on electricity production
 - E.g., WI has proposed under Clean Air Interstate Rule (CAIR)
 - Set-asides for renewables
 - Regulators specify certain % of total allowances to be granted for renewables and efficiency (or other)
 - RE must apply, but no competition with fossil fuels for these allowances
 - E.g., Federal level SO₂ and NO_x, CAIR

Load-Based Cap



- Traditional cap and trade distribute allowances to the sources of emissions (e.g. electricity generators)
- Load-based approach focuses on portfolio of resources used to serve demand (LSEs)
 - Helps issue of “leakage” – using sources outside of region
 - RE more of an option at LSE level than generator level
 - E.g. CA and potentially OR
- Claims: Depends on policy structure
 - LSE would be able to use renewables to meet load-based cap
 - Would renewables used for voluntary markets be additional?

Retire on Behalf of RE Demand

- Regulators account for projected demand for renewable electricity and reduce # of allocations based on projections
- True up to account for actual demand
- Claims: Allowances would be retired on behalf of voluntary demand, enabling claims
- E.g. RGGI
 - Model Rule provides option to states to use this approach

RE as Eligible Offset

- “Offsets” another option for reducing GHG emissions
 - Create emissions reductions outside of direct emissions by regulated entities
 - E.g. Carbon sequestration
- Under cap and trade, an offset may be counted as an allowance to comply with the emissions cap
 - Provides flexibility and may lower costs of compliance
- Claims: If RE is used as offset, could make claims
- Offset standards can be difficult for renewables – additionality requirements
- E.g. Chicago Climate Exchange (not RGGI)

Conclusions

- Impact of carbon regulation on voluntary markets is unclear because it is still emerging
- Policy design will impact strength of claims that RE can make
- Cap and trade programs will limit emission reduction claims by renewables, unless RE receive allowances
- Claims could be limited to “emissions free” or indirect emissions reductions
- If so, what will be the impact on demand? Will consumers still have motivation to make purchases?

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